

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/008989

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 F01N7/14 F01N3/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 F01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98/50688 A (MINNESOTA MINING & MFG) 12 November 1998 (1998-11-12) cited in the application page 3, lines 7-10	1,5,6,8, 10,12, 13,17,18 2-4, 14-16
Y	page 7, lines 11-15,19-23,28-31 page 9, lines 1,5-7,12-17 page 10, lines 10-12,26-28 page 11, line 2; figures 1-3	
Y	US 5 290 522 A (ROGERS JOHN J ET AL) 1 March 1994 (1994-03-01) column 1, lines 49-63; figure 2	2-4, 14-16
X	DE 36 42 714 A (WITZENMANN METALLSCHLAUCHFAB) 16 June 1988 (1988-06-16) column 2, lines 15-31; figures 1,3,5	1,6,7,9, 11,12
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

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Date of the actual completion of the International search

9 August 2004

Date of mailing of the international search report

16/08/2004

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 149 992 A (EBERSPAECHER J GMBH & CO) 31 October 2001 (2001-10-31) page 3, paragraph 25-27; figure 1	1,7, 10-12
X	US 5 419 127 A (MOORE III DAN T) 30 May 1995 (1995-05-30) column 1, lines 52-61 column 2, lines 1-4,50,51 column 5, lines 55-62 column 6, lines 1-17; figure 4	1,9,12
X	DE 37 20 714 A (GRUENZWEIG & HARTMANN MONTAGE ;DAIMLER BENZ AG (DE)) 5 January 1989 (1989-01-05) column 3, lines 42,45-47,50-53 figures 1,7	1,12
Y	US 4 305 992 A (MARLOR ALAN J ET AL) 15 December 1981 (1981-12-15)	1,5, 7-13,17, 18
A	column 2, lines 42-44,49-60,65,68 column 3, lines 7-11,16	4,16
Y	US 3 991 254 A (TAKEUCHI YUKIHISA) 9 November 1976 (1976-11-09)	1,5, 7-13,17, 18
A	column 1, line 67 - column 2, line 6 column 3, lines 40-52 column 4, lines 5,6; figures 5,8-15	4,16
X	US 5 697 215 A (FOUQUEMBERGH MICHEL ET AL) 16 December 1997 (1997-12-16)	1,9,12
A	column 4, lines 14-18,24-26; figure 1	3,8

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/008989

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9850688	A	12-11-1998	AU 4259497 A CA 2290013 A1 DE 69719813 D1 DE 69719813 T2 EP 0980465 A1 JP 2002511124 T WO 9850688 A1 US 2003097752 A1	27-11-1998 12-11-1998 17-04-2003 24-12-2003 23-02-2000 09-04-2002 12-11-1998 29-05-2003
US 5290522	A	01-03-1994	DE 4344303 A1 GB 2274072 A JP 6238129 A	14-07-1994 13-07-1994 30-08-1994
DE 3642714	A	16-06-1988	DE 3642714 A1	16-06-1988
EP 1149992	A	31-10-2001	DE 10020492 A1 WO 0181736 A1 EP 1149992 A1 JP 2003531994 T	31-10-2001 01-11-2001 31-10-2001 28-10-2003
US 5419127	A	30-05-1995	NONE	
DE 3720714	A	05-01-1989	DE 3720714 A1	05-01-1989
US 4305992	A	15-12-1981	CA 1169199 A1 DE 3066318 D1 EP 0030123 A1 JP 1451130 C JP 56092155 A JP 61035143 B	12-06-1984 01-03-1984 10-06-1981 25-07-1988 25-07-1981 11-08-1986
US 3991254	A	09-11-1976	JP 50101406 A JP 1079148 C JP 49115975 A JP 56022574 B JP 1148540 C JP 49128910 A JP 57038557 B DE 2411222 A1 GB 1457931 A	12-08-1975 25-12-1981 06-11-1974 26-05-1981 26-05-1983 10-12-1974 16-08-1982 26-09-1974 08-12-1976
US 5697215	A	16-12-1997	FR 2719338 A1 CA 2163623 A1 DE 69506359 D1 DE 69506359 T2 EP 0706608 A1 ES 2126894 T3 WO 9529327 A1 JP 9504072 T	03-11-1995 02-11-1995 14-01-1999 29-04-1999 17-04-1996 01-04-1999 02-11-1995 22-04-1997